



PRESCRIPTION ADHERENCE; AN INVESTIGATION AMONG PATIENTS AT DISTRICT HEAD QUARTER HOSPITAL, SARGODHA

drharoonkhan@hotmail.com

Dr. Zahid Mahmood¹, Dr. Khan Muhammad Baber², Dr. Haroon-ur-Rashid³, Safirah Maheen⁴, Ambreen Malik Ultra⁵

1. Associate Professor, Department of Radiotherapy/ oncology, Bolan Medical College, Quetta
2. Assistant Professor, Department of Surgery, Bolan Medical College, Quetta.
3. Assistant Professor, Department of Radiotherapy and Nuclear Medicine, Sargodha Medical College, University of Sargodha, Sargodha.
4. Faculty of Pharmacy, University of Sargodha, Sargodha.
5. Faculty of Pharmacy, University of Sargodha, Sargodha.

Correspondence Address:

Dr. Haroon-ur-Rashid
Assistant Professor,
Department of Radiotherapy and
Nuclear Medicine, Sargodha Medical
College, University of Sargodha,
Sargodha.
drharoonkhan@hotmail.com

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ABSTRACT... Objective: The aim of current research was to highlight the abilities of patients to understand and follow prescription. **Study design:** Cross sectional study. **Setting:** District Head Quarter (DHQ) hospital Sargodha, Punjab, Pakistan. **Duration:** Data was collected between April to June, 2015. **Methods:** Study was conducted by well-trained pharmacists regarding prescription understanding and following. A well structured questionnaire was designed to gather information from 150 patients that comprised of questions based on all factors to be evaluated for prescription understanding and following. **Results:** The findings of this critique reveal that, 30% of patients understood instructions given on prescription where as, 12% of patients were able to comprehend physicians writing and 23% were those who even didn't understand prescription abbreviations. Similarly, correct method of drug administration, compliance with frequency of dose and dosage form and accurate dose intake were acknowledged by 66%, 65%, 73% and 80% patients, respectively while, 28% patients were able to make clear understanding with precautions written on prescription. However, 20% of patients reported that medicines have disturbed their routine life, 29% recognized their dependency on prescribed medications, 22% consulted with a third person for prescription interpretation, 36% reduced their dose to half due to side effects, 35% stated that prescribed brands were available to them and 65% missed their doses due to high cost of brands. Moreover, 76% patients showed consciousness regarding value of therapy and only 31% patients acknowledged that prescribed brands were economical. **Conclusion:** There is a lot of room for improvement in factors related to prescription understanding and following. Enhanced literacy rate, generic prescribing practices and cost-effectiveness should be considered for prescription consideration. Most important from Pakistan's point of view, role of pharmacist should be implemented in every health sector of country to mimic most of prescription related problems.

Key words: Prescription, understanding, following, interpretation.

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INTRODUCTION

Pakistan is a country having insufficient health amenities and very low literacy rate (45%). Maximum number of patients prefer over the counter (OTC) medicines from medical stores, being run by non-professionals without looking their health care providers. Also standard pharmacy system has not yet been established in Pakistan. The principal cause of adverse drug events in our society is inability to understand prescriptions and drug labels¹. Ample consideration has been paid towards medication errors attributable to prescribers and poor health care system, nevertheless no strategies have

been devised yet to improve patient associated errors². Numerous factors are involved in patient linked medication errors like low literacy rate, misleading drug labels, misapprehending prescription terminologies, abstrusing instructions and absence of verbal interface amongst patient and prescriber, hence resulting in poor patient compliance with suggested therapeutic regimen.¹

For most patients, one of the biggest stumbling blocks due to which patients are unable to understand and follow prescription is complexity of multiple regimen and prescription abbreviations. Literature review discloses that

patients prescribed with few drugs than multiple drugs are more likely to comprehend prescription and express improved drug compliance than patients prescribed with several medicines daily.³ Moreover, elderly people suffer from various illnesses and have difficulty in differentiating a number of medicines so, poor patient compliance is very common in elderly people. According to WHO prescribing indicators, rational prescribing can encourage patient drug compliance and diminish poly pharmacy practice.¹

The principal idea behind this hypothesis was that maximum patients belong to OPD (outdoor patients), who take medicines by themselves at their homes/place of residence/work and have infrequent communication with their physicians about drug related problems. Therefore, current investigation was piloted to identify that, what patients recognize from prescription written by physician and up to which magnitude they follow prescription. This study also highlights prescriber and patient attitude, pharmacist role in health care system and paucities that are likely factors stick to patient non-compliance towards therapy.^{4,5}

METHODOLOGY

A cross sectional study was directed at DHQ Hospital Sargodha by well-trained pharmacists concerning prescription understanding and following. The study was approved by Departmental Ethical Committee. Data was obtained from 150 patients randomly, regardless of gender discrimination via convenient sampling technique. A well structured questionnaire was designed to gather information from patients that contained questions centered on all factors to be appraised for prescription understanding and following. The whole process was led with the consent of concerned authorities and secrecy of prescriptions was made certain to hospital administration. The pre-designed questionnaire comprised of successive questions concerning prescription understanding and following such as, physician's writing, medical terminologies written on prescription, awareness regarding frequency of dose, patient understanding of instructions written on prescription, method of drug

administration, exact time of therapy, precautions/interactions, appropriate dose, reduction in dose due to emergence of adverse effects, availability of prescribed brands, economical level of brands, importance of therapy, development of patient's dependency on prescribed brands and disturbance of routine life. Finally the data was analyzed using SPSS statistical software version 10.

RESULTS

Prescription Understanding

Data was collected from 150 patients. The results stated in Table-I and Fig-I depict that 88% ($p=0.039$) patients were unable to understand physician's writing. Similarly, 72% ($p=0.029$) patients failed to understand precautions/interactions, 77% ($p=0.063$) were unable to understand terminologies written on prescription and 70% ($p=0.041$) were incompetent to appreciate instructions. Moreover, 80% ($p=0.025$) patients were taking exact dose written on prescription, 66% ($p=0.053$) were very familiar about the way of administering medication and 22% ($p=0.033$) consulted with a third person for prescription interpretation.

Prescription Following

Out of 150 patients, 60% (90) were taking exact dose frequency, 74% (110) were taking prescribed dosage form, 73% (109) ($p=0.019$) were aware regarding importance of therapy, 30% (45) patients had quitted medicine and 37% (55) had reduced the dose to half of original dose after the emergence of side effects. Only 20% (30) mentioned that side effects disturbed their routine lives, 30% (44) ($p=0.055$) stated dependency on prescribed medicines, 66% (98) ($p=0.011$) missed their medicine due to high cost and only 36% (53) ($p=0.051$) were taking prescribed brand (Table-II, Fig-I).

DISCUSSION

Prescription understanding is the foremost factor for patient compliance and adherence to treatment. Most patients are unable to read prescription due to doctor's writing, which is a pre-requisite of prescription.

Percentage of Patients who Understand and Follow the Prescription

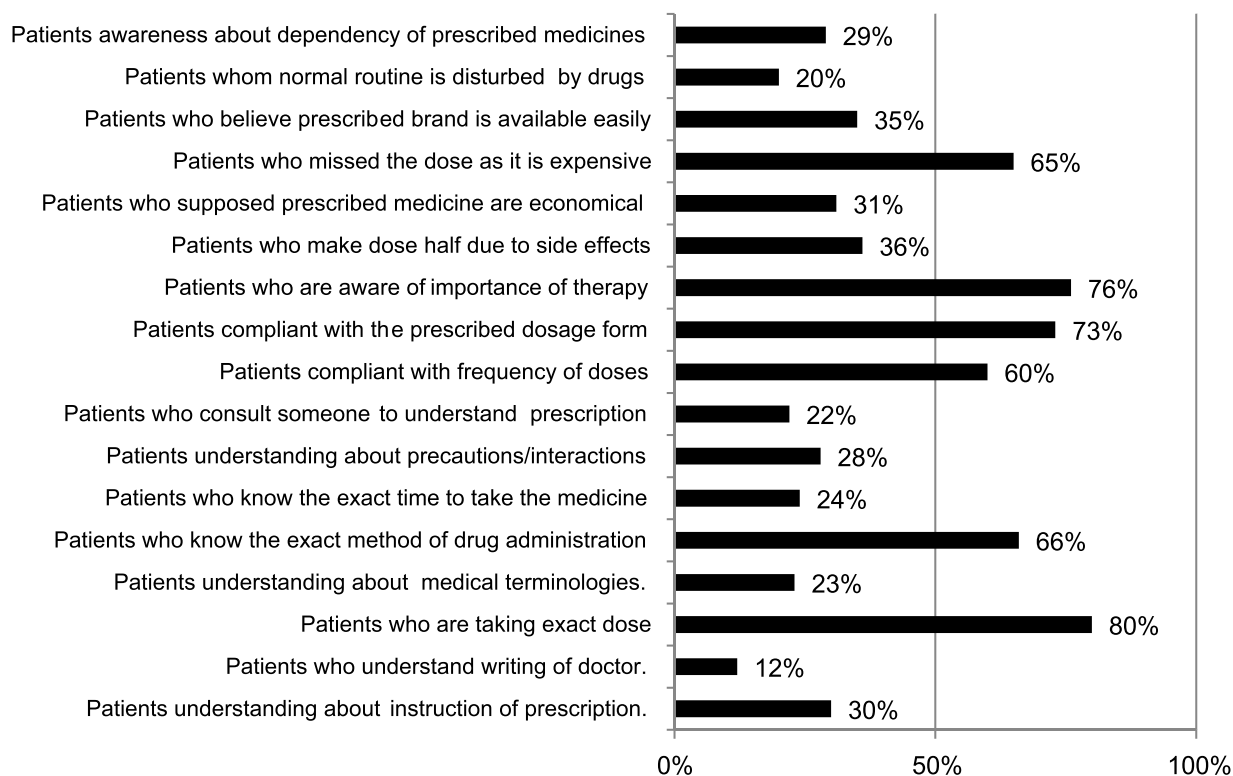


Figure-1. Evaluation of Various Factors Associated with Prescription Understanding and Following

| N=150 | | |
|---|-------------------------|------------------------|
| Factors Associated with Prescription Understanding | Patients who said "Yes" | Patients who said "No" |
| Patients who understand the instruction given on prescription. | 45 | 105 |
| Patients who understand writing of doctor. | 18 | 132 |
| Patients who are taking exact dose | 120 | 30 |
| Patients who understand medical terminologies on the prescription. | 35 | 115 |
| Patient who know the exact method of drug administration | 99 | 51 |
| Patients who know the exact time to take the medicine | 36 | 114 |
| Patients who understand precautions/interactions on the prescription. | 42 | 108 |
| Patient who consult with someone to understand the prescription. | 33 | 117 |

Table-I. Evaluation of patient's attitude towards prescription understanding

Physicians try to examine as many patients as they can, owing to which they make a mistake of poor writing without considering patient's life. That's why 88% (132) patients in current study were unable to recognize physician's writing. This signifies that doctor's writing has strong impact on medication errors. Although, there are a few ways by which a physician can stipulate

a medicine, identical dose and dosage regimen can be inscribed in numerous ways such as three times daily can be written as thrice a day, TID, every 8 hrs etc. This becomes mostly problematic for elderly patients who have more than one prescribed medication and physicians writing is critical issue for illiterate people.⁶

| Factors Associated with Prescription following | N=150 | |
|---|-------------------------|------------------------|
| | Patients who said "Yes" | Patients who said "No" |
| Patient who are compliant with the frequency of doses | 90 | 60 |
| Patients who are compliant with the prescribed dosage form. | 110 | 40 |
| Patients who are aware of importance of therapy. | 109 | 41 |
| Patients who make dose half due to appearance of side effects | 55 | 95 |
| Patients who supposed prescribed medicine are economical | 47 | 103 |
| Dose is missed because it is expensive for the patient? | 98 | 52 |
| Patients who believe prescribed brand is available easily | 53 | 97 |
| Does the drug disturb the normal routine of the patient? | 30 | 120 |
| Does the patient know about the dependency of prescribed medications? | 44 | 106 |

Table-II. Evaluation of patients attitude towards prescription following

Furthermore, the carelessness of patients to administer drugs appropriately and to take proper dose is centered on incompetence to understand physician writing. The circumstances in our study were much considerable as 80% (120) patients were taking exact dose. Here results were significant, demonstrating that proper awareness of patient helped him/her to take proper dose. Furthermore, 66% (99) patients were aware of precise method of drug administration. The way physicians inscribe dose instructions is hard for patients to grasp so, staff at medical stores help them to some extent in comprehending treatment schedule, because potential to follow instructions is crucial in ambulatory care. Previous finding submits that patient’s elucidations may widely deviate when dosing intervals and administration methods were presented in unclear form by physician.⁷

An additional important factor in our study was duration of therapy, which was mentioned on 100 prescriptions while, 50 prescriptions lacked it, which reveals patient load on physician and absence of counselling and communication between prescriber and patient. The significance of effective communication amid patient and healthcare provider is ever more notorious in relation to adherence.⁸ As well, 72% (108) patients failed to get instructions on prescription accurately. Lack of ability to understand prescription and follow its instructions is one more obstacle for taking medicines. The results were statistically significant, demonstrating that

incompetence to fathom prescription causes medication errors. In fact, an earlier finding illustrated that 60 % patients under examination were unable to state the instructions given by physician within 10 to 80 minutes after getting information.⁹ The treatment duration and the way patients take their medicines is also imperative in unification with these perspectives.¹⁰ In addition, illiteracy of most patients was another reason due to which they were unable to read English language. According to National Adult Literacy Act of 1991, functional literacy is defined as “the ability to read, write and speak in English and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one’s goals, and develop one’s knowledge and potential”.² 70% (105) patients in prevailing study were incompetent to understand prescription directions/instructions, which confirms that there is a robust relationship between right intake of medications and illiteracy rate.

Likewise, it’s the tradition of most physicians to use medical terminologies while prescribing, which becomes difficult for a layman to perceive. In underlying survey, 77% (115) patients were unable to understand terminologies because of Urdu as a medium of education and low literacy rate for majority of patients. Occasionally, doctors overemphasize the information given to patients¹¹ and concurrently, patients often misconstrue medical terminologies that critically impact on adequate conversation between patients and

physicians.¹² Furthermore, in our society, people do not even consider any other person about prescription understanding, due to shyness and hesitation, like in present survey, 22% (33) conferred a 3rd person regarding prescription consideration. The chief logic behind inadequate understanding and following of prescription is unavailability of pharmacists at health care premises, which leads to adverse drug events in our community.

Prescription following is the necessary step for medication effectiveness. The extent to which a patient follows medical opinion is a prime concern in every medical specialty.¹³ Much consideration must be given to convince the patients regarding adherence to prescriber's recommendations, with adequate acknowledgement of elusion of complex and costly regimens that may be utterly irrational.¹⁴ In the present investigation, 60% patients were stick to dose frequency. The intricate treatment plan which includes factors like number of medications, dose interval and duration of therapy badly affects adherence.³ For patient compliance and potent therapy, the use of correct dosage form as recommended by physician is essential and 74% patients in our survey were compliant with prescribed dosage form.

The awareness of therapy's worth has great effect on proper medication and in our research, 73% patients were aware of importance of therapy. The cause of non-compliance amongst remaining patients was emergence of side effects, considering which most of them begun taking half of original dose or they started omitting the dose. In present study, 30% patients stopped taking medicine and 37% patients started taking half of original dose after appearance of adverse effects. Former study discovered that adverse effects are challenging in at least half of the patients taking medicines that may be a rational logic to cease their medication.^{12,15,16} Owing to the occurrence of adverse events, it is prospective that patient's normal routine may be bothered and in the underlying survey, 20% patients revealed the interference with daily routine. Most of the drugs

have potential for abuse and patients taking such therapeutic modalities tend to develop physical and psychological dependence and in our study, 30% patients described the dependency on their prescribed medicines.

The majority of population in Pakistan, a developing country, is economically unstable and sparsity of health care services and inadequacy of financial resources are the main reasons for patient's unwillingness to buy costly medicines.¹³ Our results also depict the same thing i.e., just 47 patients said that prescribed medicines were cost-effective and owing to this factor mostly patients miss the dose, as was scenario in our study, in which 66% patients missed the dose due to high treatment cost. So, cost is a major issue in Pakistan, because of which patients are unable to take proper medication. The major reason for prescribing costly medicines as reported in one of our study conducted by Khan *et al* (2013) is attraction of prescriber for incentive and promotional tools that majority of industries spend to get high market share.¹⁷ Mostly physicians prescribe medicines by their brand name therefore, availability and cost of prescribed brands affect patient's perseverance to therapy. In our investigation, 36% patients were taking the same brand as prescribed by the physician.

RECOMMENDATIONS FOR IMPROVEMENT OF PRESCRIPTION ADHERENCE

The problem of not understanding prescription instructions and often misinterpreting them on patients part can be sorted out, if physicians deliver adequate patient education by limiting instructions; using native language when explaining diagnosis and conveying instructions; accompanying oral teaching with written material; involving patient's family members and friends; and strengthening the concepts deliberated. Besides, if a pharmacist plays its role in imparting medication-related awareness to patients, it may aid the clinician to effort on other facets of treatment plan like, he can help escalate adherence to treatment by supplying additional information about individual drugs to patients, detecting potential adverse drug

reactions and interactions, and providing suitable drug containers/compliance aids.¹⁸ In a nutshell, if patient understands prescription entirely, he will definitely follow the prescription and will be compliant with it.

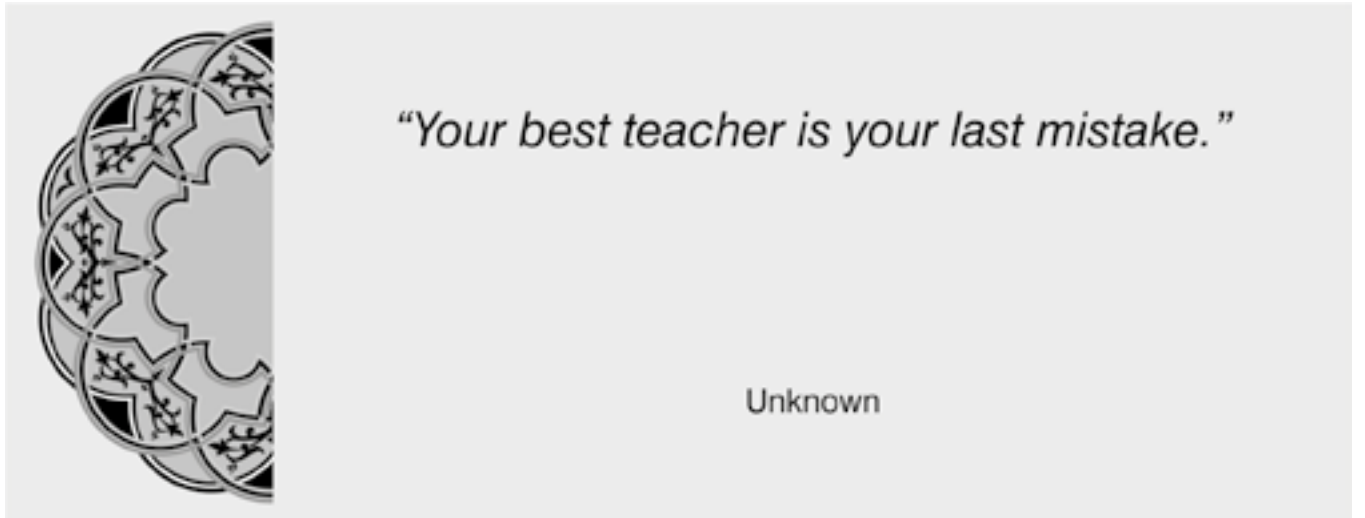
CONCLUSION

The aforementioned results reveal that understanding and following of prescription is an important concern for patient compliance. The patient adherence is not only a patient or physician issue but it is systems problem and so strategies should be integrated at systems level. There should be an effective communication between physician, patient and pharmacist. Enhanced literacy rate, generic prescribing practices and cost-effectiveness should be considered for prescription deliberation. There is a lot of room for upgrading factors related to prescription understanding and following and a little effort can bring many changes in the present system.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

| Sr. # | Author-s Full Name | Contribution to the paper | Author=s Signature |
|-------|-------------------------|---|--------------------|
| 1 | Dr. Zahid Mahmood | Idea Conception & Drafting Manuscript | |
| 2 | Dr. Khan Muhammad Baber | Idea Conception & Questionnaire designing | |
| 3 | Dr. Haroon-ur-Rashid | Idea Conception & Questionnaire designing | |
| 4 | Safirah Maheen | Data collection & Result Interpretation | |
| 5 | Ambreen Malik Ultra | Data collection & Result Interpretation | |